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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,168	12/10/2003	Sven Thate	54129	5053

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EXAMINER
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ONEILL, KARIE AMBER

ART UNIT	PAPER NUMBER
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1745

MAIL DATE	DELIVERY MODE
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08/22/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/731,168	Applicant(s) THATE ET AL.	
	Examiner Karie O'Neill	Art Unit 1745	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12-10-03</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-12 are pending in this office action.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear from the language "possibly with gas diffusion layers", if gas diffusion layers are meant to be part of the membrane electrode assembly or if they are optional.

4. Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear to the examiner what applicant is claiming "fuel cell conditions" to be, since there are so many "conditions" that are part of a fuel cell and its operation.

5. Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear to the examiner what applicant is

claiming "electrolytic conditions" to be, since there are so many "conditions" that are part of an electrolytic cell and its operation.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Reddy et al. (US 5,084,144).

With regard to Claim 1, Reddy et al. disclose a method of making gas diffusion electrodes suitable for use with solid polymer electrolyte fuel cells with gas diffusion electrodes provided with noble or precious electrocatalytic metals deposited onto support material or a carbon electrode material (see abstract), the method comprising the following steps: (A) the introduction of ions or impregnation into the catalytic layer of the uncatalyzed gas diffusion electrode a solution comprising an ion exchange polymer until the solution has penetrated part/whole way into the cross section of the structure (column 4 lines 4-13); (B) the application of the gas diffusion electrode to both sides of the polymer electrolyte membrane (column 5 lines 3-9 and 16-29); (C) the electrochemical deposition of the ions of the catalytic component introduced into the reaction layers, by inserting the gas diffusion electrode into a plating bath containing catalytic metal ions (column 4 lines 14-20).

With regard to Claims 2-5, Reddy et al. disclose wherein the electrochemical deposition of the ions of the catalytic component in step (C) is carried out under fuel cell conditions and under electrolytic conditions, these conditions being any conditions that affect the operating conditions of the fuel cell, for example, the application of current being applied to the gas diffusion electrode as interrupted direct current (column 4 lines 30-42 and column 11 lines 55-59).

With regard to Claims 6-8 and 10, Reddy et al. disclose wherein the fully treated and fully catalyzed gas diffusion electrodes can be used as cathodes or anodes in electrochemical cells (column 12 lines 46-48) and wherein in step (C) at least one element from Group VIII or Group I-B of the periodic table, which would be one of the elements Pt, Co, Fe, Cu, Ru, Pd, Ni, Au, Ag, Rh and Ir, preferably a metal of the second and third triads of the Group VIII (column 6 lines 66-68 and column 7 lines 1-2), is deposited as the catalytic component onto the electron conductor, also called the anode or cathode, on at least one side of the polymer electrolyte membrane (column 11 lines 29-47).

With regard to Claim 9, Reddy et al. disclose wherein the electron conductor or support material comprises carbon materials in the form of carbon cloth, carbon paper, carbon fibers and/or carbon particles, etc. (column 3 lines 45-47 and column 7 lines 35-37).

With regard to Claim 11, Reddy et al. disclose, wherein step (B), together with the electron conductor or support material/electrode, an ion conductor is applied to at least one side of the polymer electrolyte membrane. If desired, the electrode may be

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bonded onto either side of the solid polymer electrolyte membrane by interposing a liquid electrolyte between the solid polymer electrolyte coated electrodes in which case ions are transported through the solid polymer electrolyte (column 12 lines 53-67 and column 13 lines 1-12).

With regard to Claim 12, Reddy et al. disclose wherein the catalytic component in step (A) is introduced into the polymer electrolyte membrane in an amount of from 0.000005 to 0.05 mmol/cm<sup>2</sup>, or 0.05 to 4.0 mg/cm<sup>2</sup> (see abstract).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karie O'Neill whose telephone number is (571) 272-8614. The examiner can normally be reached on Monday through Friday from 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karie O'Neill  
Examiner  
Art Unit 1745

KAO

**MARK RUTHKOSKY**  
**PRIMARY EXAMINER**

*Mr. Ruthkosky*  
8.16.07